P

Export Certification Manual

# Appendix P

## *U.S. Export Standards for Seed Potatoes*

## Contents



## General Description

U.S. EXPORT SEED POTATOES consist of seed potatoes certified by an official state seed potato certification agency as having met the requirements of this article and to which there have been affixed the official indicia of certification.

## Definitions

### Approved Testing Methods-

bioassay, serodiagnostic, or other testing methods including, but not limited to, gel electrophoresis and molecular hybridization using methods which have been approved by the Certification Section of the Potato Association of America in consultation with the Pathology Section of the Potato Association of America.

### Disease Tested-

a process where each explant has been tested for and found free from potato spindle tuber viroid (PSTV), potato virus A (PVA), potato virus M (PVM), potato virus S (PVS), potato virus X (PVX), potato virus Y (PVY), leafroll (PLRV), bacterial ring rot (BRR), and bacterial soft rot/blackleg (Erwinia spp.) using approved methods.

### Virus X-Tested-

tested for and found to be within tolerance for PVX using approved testing methods.

### Class-
seed quality level as it relates to compliance with the specified tolerances for diseases and varietal purity.

### Limited Generation System-
a certification scheme wherein the planting stock for each seed class is limited as to eligibility by compliance with established disease tolerances and the number of increases made in the field. The classes or generations of the limited generation system included in this article are; Prenuclear, Nuclear, Generation 1, Generation 2, Generation 3, Generation 4 and Generation 5; where Prenuclear is laboratory production, Nuclear is greenhouse production and Generations 1-5 are the first and subsequent field increases.

### Seed Potatoes-
potato plantlets, plants, microtubers, minitubers, tubercles and tubers.

### Plantlets-
small plants produced under aseptic culture conditions in a laboratory.

### Plants-
rooted plants produced under a screenhouse, greenhouse, or field environment.

### Microtubers-
small tubers produced under aseptic culture conditions in a laboratory.

### Minitubers-
small tubers produced in a soilless medium under greenhouse conditions controlled to exclude pests and diseases.

### Tubercles-
small tubers produced in leaf axils of leaf bud cuttings.

### Tubers-
potatoes produced under field conditions.

### Off-Type-
different from the cultivar, variety, strain, or selection on the application for certification.

### Grade-

a tuber quality as it relates to compliance with specific tolerances for tuber sizes, defects, diseases and other factors outlined in the U.S. No. 1 Seed Potato Grade.

### Certification-

a process where employees of an official certification agency visually inspected growing grounds or facilities and crops thereon or therein and have determined that the standards applicable thereto as specified in this article have been met. It does not guarantee or warrant that the seed potatoes to which official indicia of certification are attached, or which are otherwise represented as certified, are merchantable or fit for particular purpose.

### Official State Seed Potato Certification Agency-

a state seed potato certification agency duly authorized by state law to provide seed potato certification services.

### Explant-

an in-vitro potato plant or plantlet produced by rooting an excised tip of a tuber sprout or an axillary bud from a growing plant which shall serve as a parent for a whole clone or accession of micropropagated plants or plantlets.

### Clone-

all of the progeny of a single explant and/or plantlets.

## General Provisions

This article provides for the certification of seed potatoes for export by official state seed potato certification agencies. The standards specified are mandatory, but they shall not be construed to supplant or otherwise take the place of official state standards which may be designed for application to domestic seed potatoes. Whenever official state agencies, at the request of seed potato growers, seek to certify seed potatoes for export in compliance with this article, they should consult the USDA/APHIS Export Certification Manual for whatever current guidance it may provide.

### Basis for Certification

Except as otherwise provided, certification is based solely on visual inspections of a sample of seed potatoes from each lot which are found to meet the tolerances prescribed in this article. Each planting shall be inspected visually at least two times and determined to be in compliance with specific tolerances.

## Limited Generation System

The certification of U.S. EXPORT SEED POTATOES is in conformance with the limited generation system specified by this article.

## Participant Responsibilities

The participant shall be a qualified seed potato grower raising certified seed potatoes in accordance with official state certification regulations. Farming, sanitation and other seed production practices not addressed in this article are the responsibility of the participant. Failure of the participant to comply with the requirements of this article shall make seed potatoes ineligible for export as U.S. EXPORT SEED POTATOES. In addition, the participant shall:

- Select the location of and properly maintain any planting being grown subject to the provisions of this article; and
- Maintain identity and grade of each lot of certified seed potatoes in the grower participant's possession in a manner approved by the official state seed potato certification agency.

## Location of Planting

Generally, each planting site shall be subject to the approval of the official seed potato certification agency to which the grower participant makes application.

Specifically, to be eligible for use to produce a class of U.S. EXPORT SEED POTATOES, fields shall be at least 50 meters from any other potato planting which, by any means, would unduly expose seed potatoes entered for certification to infection by disease-causing pathogens.

## Maintenance of Plantings

Plantings shall be kept in a good growing condition and general insect and seed pests shall be under effective control. Suitable precautions shall be taken in the cultivating, irrigating, digging, grading, movement, use of equipment, and in other farming practices to guard against the spread of disease and insect pests into or within plantings.

## Harvesting and Grading Equipment and Storage Facilities

Each lot of U.S. EXPORT SEED POTATOES shall be stored so as to preclude intermixing with any other class of certified seed potatoes. U.S. EXPORT SEED POTATOES shall not be stored in the same storage facility with potatoes found to be infected with bacterial ring rot, *Clavibacter michiganensis* subsp. *sepedonicus*.

### Containers

All containers used for the harvest, storage, and handling of U.S. EXPORT SEED POTATOES shall be new, or cleaned and disinfected, to the satisfaction of the official state certifying agency. All containers used for packaging and shipping U.S. EXPORT SEED POTATOES shall be new.

## Authority

### Federal

USDA, APHIS, Plant Protection and Quarantine (PPQ): Foreign countries have established plant quarantine regulations which exporters of U.S. agricultural products are required to meet. To enable USDA/APHIS/PPQ to help exporters meet the plant quarantine import requirements of foreign countries, the Organic Act was passed in 1944. The Organic Act as amended provides the authority for issuing Federal Phytosanitary Certificates (FPC's) for the export of plants and plant products. The regulation for enforcing the Organic Act is 7 CFR Part 353. Among other provisions, this regulation provides a list of PPQ offices where information can be obtained for issuing PC's, identifies the responsibilities of exporters and of certifying officials, and provides for issuing PC's and for entering into cooperative export certification programs.

### State

Authority for certifying seed potatoes at the state level shall reside with the agency granted theauthority by state law to carry out these regulatory functions. The Department of Agriculture for the state from which the seed potatoes are originating may be contacted to obtain the name and address of the official agency with certification authority.

## Responsibilities

### Federal

It is the responsibility of APHIS, Plant Protection and Quarantine (PPQ) to issue Federal phytosanitary certificates based on compliance with the export standard, to monitor the use of the standard and, to represent the United States growers in phytosanitary issues with other National Plant Protection Organizations.

APHIS, PPQ will periodically review the export standard to ensure that it is in keeping with current biological information and requirements of international trade and will, in cooperation with state and industry representatives, effect any necessary changes to maintain its viability and integrity.

### State

The official state seed potato certification agency is responsible for verifying that the requirements of this article have been met within the limitations imposed by each state and accepted industry standards.

### Participant

See General Provisions

## Requirements for Classes of Certified Seed Potatoes

Wherever this section specifies a class or classes as being eligible for certification, it shall mean that the stock to be planted was previously certified as the specified class by an official seed potato certification agency. That certification shall have been to the same class as specified in this article. Also, all seed potatoes to be certified as seed potatoes shall be field monitored visually for trueness to plant type and tubers visually verified to type following harvest.

### Prenuclear (In-vitro Production)

To be eligible for certification as prenuclear stock, each explant shall have been disease-tested as described under the definition. Plantlets and microtubers shall be produced in aseptic culture. Records shall, at all times during normal business hours, be made available for inspection by representatives of the official state certification agency.

### Nuclear (Greenhouse or Controlled Environment Production)

To be eligible for certification as nuclear stock seed potatoes, plant material shall have met prenuclear requirements. At least 5% of this increase shall be disease-tested, except when there are fewer than 20 plants or minitubers, in which case, at least five plants or minitubers shall be disease-tested. Plants or minitubers selected for such disease testing may be bulked following acceptable methods for test purposes. In the event that any test is positive for any disease infection, the whole clone, together with any progeny, shall be ineligible. Testing and regeneration records shall be maintained and made available for inspection at all reasonable times.

### Generation 1

Only plant material that has met the requirements for prenuclear or nuclear stock shall be eligible for certification as Generation 1 - U.S. EXPORT SEED POTATOES. Each cultivar and field should be individually tested by randomly collecting from separate plants a minimum of 250 leaflets or 1% of the hills for PVX testing in the laboratory. Tolerance for PVX shall be 0%. Plants shall be inspected

at least twice while growing, and on each inspection, determined to be free of all other potato diseases that may be discovered by visual inspection.

## Generation 2

Only plant material that has met the requirements for Generation 1 or earlier increases shall be eligible for certification as Generation 2 - U.S. EXPORT SEED POTATOES. Plants shall be sampled and PVX tested during the growing season by randomly collecting from separate plants 250 leaflets from each 10 acres or portion thereof. Not more than one plant of the 250 plants per 10 acres tested shall be PVX infected (0.40%). Each planting shall be inspected visually at least two times and determined to be in compliance with the tolerances specified in Table P-1-1.

TABLE P-1-1: **Tolerances for Generation 2**

| Factor | First Field Inspection | Second Field Inspection |
|---|---|---|
| Potato Spindle Tuber | 0 | 0 |
| Bacterial Ring Rot | 0 | 0 |
| Blackleg | 0.10 | 0 |
| Wilts | 0.10 | 0 |
| Total, All Viruses | 0.25 | 0.10 |
| Varietal Mixture | 0.10 | 0 |

## Generation 3

Only plant material that has met the requirements for Generation 2 or earlier generations shall be eligible for certification as Generation 3 - U.S. EXPORT SEED POTATOES. Each planting shall be inspected visually at least two times and determined to be in compliance with the tolerances specified in Table P-1-2.

TABLE P-1-2: **Tolerances for Generation 3**

| Factor | First Field Inspection | Second Field Inspection |
|---|---|---|
| Potato Spindle Tuber | 0 | 0 |
| Bacterial Ring Rot | 0 | 0 |
| Blackleg | 0.25 | 0.10 |
| Wilts | 0.20 | 0.10 |
| Total, All Viruse | 0.25 | 0.10 |
| Varietal Mixture | 0.25 | 0.10 |

### Generation 4

Only plant material that has met the requirements for Generation 3 or earlier generations shall be eligible for certification as Generation 4 - U.S. EXPORT SEED POTATOES. Each planting shall be inspected visually at least two times and determined to be in compliance with the tolerances specified in Table P-1-3.

TABLE P-1-3: **Tolerances for Generation 4**

| Factor | First Field Inspection | Second Field Inspection |
|---|---|---|
| Potato Spindle Tuber | 0 | 0 |
| Bacterial Ring Rot | 0 | 0 |
| Blackleg | 0.50 | 0.25 |
| Wilts | 0.50 | 0.25 |
| Total, All Viruses | 0.50 | 0.25 |
| Varietal Mixture | 0.50 | 0.25 |

### Generation 5

Only plant material that has met the requirements for Generation 4 or earlier generations shall be eligible for certification as Generation 5 - US. EXPORT SEED POTATOES. Each planting shall be inspected visually at least two times and determined to be in compliance with the tolerances specified in Table P-1-4.

TABLE P-1-4: **Tolerances for Generation 5**

| Factor | First Field Inspection | Second Field Inspection |
|---|---|---|
| Potato Spindle Tuber | 0 | 0 |
| Bacterial Ring Rot | 0 | 0 |
| Blackleg | 1.00 | 0.50 |
| Wilts | 1.00 | 0.50 |
| Total, All Viruses | 1.00 | 0.50 |
| Varietal Mixture | 0.75 | 0.50 |

## Refusal, Cancellation of Approval and Rejection

Failure to comply with any provision of this Standard shall constitute cause for refusal of certification services, cancellation of any approvals already granted, or rejection of seed potatoes entered for certification as a class of U.S. EXPORT SEED POTATOES. In addition, the following shall be specific causes for refusal, cancellation, or rejection:

- Any field, storage, or other condition which an official state seed potato certification agency determines may be detrimental to the U.S. potato industry or to the U.S. seed potato export market, or

which may hinder or prevent accurate determination of whether or not the disease, varietal purity, grade, or other requirements of this article have been met.

- Any seed potatoes entered for certification which are verified to be infested or infected with any serious pest which is new to (exotic) or of limited distribution in the United States. Gangrene (Phoma exigua pv. foveata) and wart (*Synchytrium endobioticum*) do not occur in the United States.
- Any seed potatoes which are determined to be infested with root-knot nematode (*Meloidogyne* spp.), potato rot nematode (*Ditylenchus destructor*), cyst nematode (*Globodera* spp.), or brown rot (*Pseudomonas solanacearum*). United States quarantine restrictions do not permit the growing of seed potatoes in any golden (cyst) nematode-infested area.
- The basis for and scope of a refusal, cancellation or rejection and reinstatement following such actions shall be determined by the official state potato certification agency in the state where the U.S. EXPORT SEED POTATOES are produced.

## Grade

All U.S. EXPORT SEED POTATOES shall be graded to meet U.S. No. 1 Seed Potato Grade (Appendix A). U.S. EXPORT SEED POTATOES shall be identified by a blue colored tag.

## Identification

All U.S. EXPORT SEED POTATOES shall be identified by official state certification tags or other official indicia affixed to each container. Such official tags or indicia shall be approved by the Certification Section of the Potato Association of America.